

REMARKS

Claim 1 has been amended to specifically require that the operating means includes at least one gear which is engageable with at least one gear of a gear assembly disposed in the housing member of the hand brake assembly. Basis for this amendment can be found on page 13 and in the drawings. No new matter has been added.

ARGUMENTS

Claims 1, 3 and 4 are rejected under 35 USC 103(a) as being unpatentable over Engle '178 in view of Ring et al. It is the Examiner's position that Engle '178 teaches the apparatus for applying the hand brake essentially as claimed except for the use of fluid pressure for applying the brake. The Examiner relies upon the teachings of Ring et al as showing the use of fluid pressure for applying brakes to be a well known alternative.

The Applicant disagrees with the Examiner's position for the following reasons. In the rejection, the Examiner states that Engle teaches "an operating means 20, 16,60 having at least a portion 48 thereof engageable with at least one gear 52 of a gear assembly 23B,52,23A (the top ends elements 23A,23B) disposed in a housing or unnumbered enclosure under element 54 of the hand brake assembly". It is Applicant's position that Engle fails to teach the operating means as specified in amended claim 1.

In the response to arguments section of the Office Action, the Examiner states that more specific claiming of the gear causing an

application of the brake means would define over the art. Accordingly, as instructed by the Examiner, the claims have now been amended to require that the operating means includes at least one gear and this at least one gear is engageable with at least one gear of a gear assembly disposed in the housing member of the hand brake assembly. Accordingly, Engle fails to disclose the operating means having the limitations recited in amended claim 1.

In view of the above arguments, it is respectfully requested that the rejection of claims 1, 3 and 4 under 35 USC 103(a) over Engle '178 in view of Ring et al be withdrawn and these claims be passed to issue.

Claims 5-9 and 12-17 are rejected over various combinations of references which rely upon Engle '178 as modified by Ring et al as the basis for these rejections. As claim 1 has now been amended to overcome the rejection of Engle '178 and Ring et al, it is respectfully requested that the rejections of claims 5-9 and 12-17 be withdrawn and these claims be passed to issue.

Claim 30 is rejected under 35 USC 103(a) as being unpatentable over Barefoot in view of Engle '178. It is the Examiner's position that Barefoot teaches an apparatus for automatically applying a brake means secured to a railway vehicle but fails to teach the apparatus being associated with a hand brake assembly. The Examiner relies upon Engle '178 to overcome the deficiencies of Barefoot stating that it would have been obvious to have utilized

the automatic braking apparatus of Barefoot in a railway hand brake assembly, as taught by Engle '178, in order to effect automatic braking of a railway hand brake.

The Applicant disagrees with this rejection for the following reasons. The Examiner's attention is directed to col. 6, lines 29+ of Barefoot which discuss the general operation of the braking system. Barefoot states that in order to impart a braking force to axle 38, valves 78 and 80 can be used to restrict the flow of hydraulic fluid to and from pump 60. Because a hydraulic fluid is substantially incompressible, pump or motor 60 is forced to turn or drive shaft 62 at a slower rate when the fluid flow from pump 60 is restricted. This forced slower rotation is transferred to axle 38 via gears 64 and 66. Consequently, a braking force is applied to axle 38 in proportion to the decrease in flow rate of the hydraulic fluid circulating through loop 70. Accordingly, in the Barefoot device, it is the **restriction** of the flow of hydraulic fluid to and from pump 60 which causes a slowing of the axle 38 which ultimately results in the braking of the vehicle. Thus, the braking apparatus of Barefoot operates in an entirely different manner than the braking apparatus specified in claim 30.

Claim 30 requires that the motor means carries a gear which is engageable with a gear of a gear assembly disposed in a housing member and operates this gear assembly in a direction which will cause an **application** of the brake means. Claim 30 also requires a

means connected to the motor for **starting** the motor and **initiating** an automatic application of the brake means.

With respect to the combination of Barefoot with Engle, it is unclear where on the hand brake one would locate the automatic application apparatus of Barefoot.

In view of the above arguments, it is respectfully requested that the rejection of claim 30 under 35 USC 103(a) over Barefoot in view of Engle '178 be withdrawn.

CONCLUSION

In view of the foregoing arguments and amendments, Applicant believes that the application meets all applicable statutory and regulatory requirements. Accordingly, Applicant respectfully requests allowance of all claims remaining in the application. If the Examiner has any questions regarding this amendment and/or believes that a telephone interview would assist in the advancement of this case to allowance, she is invited to contact the undersigned Agent for Applicant.

Respectfully submitted,



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Please amend the paragraph bridging pages 19-20 as follows.

It may be desirable to add an indicator (not shown) to show how tight the brake is set. This may be a sensor which could be used as a feedback. A sensor on the apparatus 10 could be used as a feedback to the electronic system (not shown), so that the locomotive controls can tell when the brake is anywhere between 3/4 on to full on, or completely released. Preferably, a spring is provided on these valves and the pilot operated valves 68 and 72, that will cause the cylinder to go completely home, regardless of where it is set based on the spring loadings and the valves. Valves 68, 72, 64 and 62 are connected together and will be sequenced by a spring load to get the cylinder to go home. This initially happens when the spring on valve 68 is the strongest, so as the timing reservoir dies, valve 68 is going to flip over to a vented position first. Assume that the pressure in reservoir 18 goes from about 90 psi to 20 psi. At 20 psi valve 68 vents the air out of the cylinder, which retracts the piston 32 all the way home. [Now that's a position that we want to leave it in, it's done.] The next highest load on the spring is going to be in valve 72, which may drop to about 18 psi, causing valve 72 to shift over. The spring is going to overcome the air pressure exerted on the pilot side and valve 72 is going to vent the circuit that drives valve 64 and valve 62.

1. (Twice Amended) An apparatus engageable with a hand brake assembly for automatically applying at least one brake means secured to a railway vehicle with said hand brake assembly, said apparatus comprising:

(a) an operating means having at least [a portion thereof] one gear, said at least one gear being engageable with at least one gear of a gear assembly disposed in a housing member of said hand brake assembly for operating said gear assembly in a direction which will cause an application of said at least one brake means;

(b) a source of fluid pressure connected to said operating means for periodically supplying a predetermined pressure to said operating means at least sufficient to cause such application of said at least one brake means; and

(c) a means connected to said source of fluid pressure for initiating a supply of said predetermined pressure to said operating means thereby causing an automatic application of said at least one brake means by said hand brake assembly.